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STATISTICAL BULLETIN
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MORTALITY EXPERIENCE OF THE FIRST NINE MONTHS OF 1927

Unless the public health situation takes an unexpected and markedly unfavorable turn during the final quarter, nineteen hundred and twenty-seven will be a record health year in the history of the United States and Canada. This is indicated by the mortality record of more than eighteen million persons, the Industrial policyholders of the Metropolitan Life Insurance Company, during the nine-month period January to September of this year. The record shows that unprecedentedly favorable health conditions have prevailed among American and Canadian wage workers and their families. As the record of this large cross-section of the population, constituting more than one-seventh of the total, has always proved to be a reliable index of current health conditions among all the people, there is every reason to believe that both countries will register a new minimal deathrate this year.

The deathrate among the Metropolitan Industrial white policyholders for the period January to September dropped to the remarkably low figure of 8.1 per 1,000. There has been only one near approach to this: 8.2 in 1921. But the slight difference between these two figures is by no means a full measure of the improvement over the former minimum. In 1921, the Metropolitan did not insure infants under one year of age; during 1927 it has had hundreds of thousands of these lives covered by insurance in its Industrial Department. This is the age group which always records the highest deathrate. It is clear, therefore, that the mortality thus far in 1927 with deaths of infants *included* has actually bettered the lowest previous deathrate with infant mortality *excluded*. Every state and municipal health officer, every vital statistician—and in fact, every one who is actively concerned with public health progress—will immediately see the importance and significance of this wonderful achievement.

The deathrate for more than two and one-quarter million colored policyholders was 14.8 per 1,000, which is one of the lowest but not the minimal mortality rate for insured negroes. It may be compared with 15.7 and 15.1 for the first nine months of 1926 and 1925, respectively. The minimum rate for the colored for this nine months' period was 13.5 in 1921. As with the white policyholders, the matter of infant mortality must again be taken into consideration when making comparisons. With deaths of colored infants during the current year excluded, it is probable that the 1927 figure for negroes would be much closer to the former minimum.

Interest centers on the factors which have operated to bring about this remarkable and favorable record.

1927 Tuberculosis Mortality 40 Per Cent. Lower than in 1920

The outstanding single item is the further reduction of the tuberculosis deathrate among insured white persons to the astoundingly low figure of 76.2 per 100,000. This marks a reduction of more than eight per cent. over the former minimum for the first nine months of any year (83.1 in 1925). It may also be compared with 90 1 in 1924; 101.0 in 1922; and 124.9 in 1920. Thus, within the brief period of seven years, the tuberculosis deathrate in the Industrial populations of the United States and Canada has declined nearly 40 per cent. If the current rate of decline prevails during 1928, 1929, and 1930, we shall closely approach a tuberculosis deathrate of 50 in the closing year of the present decade. Let present conditions of prosperity continue, let there be no slackening in the efficiency of the preventive and educational work that is being done by both public and private health agencies and there will be, without doubt, further marked declines in the tuberculosis deathrate. Fewer deaths indicate that we shall have correspondingly fewer advanced cases of tuberculosis, and hence fewer foci for new infections. If the point is reached where the number of new cases arising from existing advanced cases is insufficient to maintain new infections, we may look for further abrupt declines in the tuberculosis deathrate, and such declines, it is entirely possible, may come in the near future.

Declining Mortality from Children's Diseases

Another factor which is having a pronounced effect on the general deathrate is the declining tendency in the mortality from the four principal epidemic diseases of childhood: measles, scarlet fever, whooping cough, and diphtheria. All except diphtheria are recording lower deathrates this year than last. The diphtheria rate has in-

creased a little as compared with 1926 but is, nevertheless, lower than in all other years. While the tendency of the deathrate for these diseases is to increase and decrease in waves of from three to seven years, there has been, nevertheless, an undeniable and marked declining trend during recent years. We are having fewer severe visitations of diphtheria—the most important of these diseases—and the people are learning the real dangers of measles and whooping cough. With increasingly better care of children sick of these diseases, with more and more cooperation on the part of parents in isolating patients and thus helping the health authorities to prevent the spread of these diseases, there is every reason to believe that still lower levels for the deathrate will soon be reached.

Influenza-Pneumonia Mortality Lower in 1927

There has been no general prevalence this year of epidemic influenza in the virulent form which is quickly complicated with fatal pneumonia. As the result the influenza deathrate for the first nine months of 1927 was less than half that for the corresponding period of 1926 and the mortality from pneumonia dropped appreciably. The reduced prevalence of epidemic influenza has been an important factor in bringing down the 1927 deathrate. Accompanying, and indeed largely dependent upon, the lower prevalence of influenza and pneumonia, we have had, this year, reduced mortality from the three principal degenerative diseases: organic heart disease, cerebral hemorrhage, and chronic nephritis. The mortality from these causes always rises in years when influenza is widely prevalent, since influenza very often hastens the deaths of persons who have chronic organic impairments.

Decline in Diarrhea and Enteritis Mortality

A marked decline in the deathrate from diarrheal complaints has also been an influence in the reduction of the general deathrate; the mortality from this cause was reduced among white policyholders during the first nine months of this year to 22.8 per 100,000 and among the colored, to 27.8. This marked a reduction for the whites of 20.3 per cent. and for the colored, of 10.6 per cent. as compared with the corresponding period of last year; and the reductions over the same period of 1925 were still greater. The drop in the deathrate from this disease this year has been due, entirely, to a decline for children under two years. There are few better indices of progress in infant hygiene than a declining deathrate from diarrheal complaints.

Deathrates per 100,000 Persons Exposed. First Nine Months of 1925, 1926 and 1927 Compared by Color for Principal Causes of Death. Industrial Department, Metropolitan Life Insurance Company. Premium-paying Business

Cause of Death	Deathrates per 100,000 Persons Exposed					
	White			Colored		
	Jan.-Sept. 1927	Jan.-Sept. 1926	Jan.-Sept. 1925	Jan.-Sept. 1927	Jan.-Sept. 1926	Jan.-Sept. 1925
All Causes of Death	808.8	887.9	841.9	1484.8	1567.9	1511.1
Typhoid fever	4.4	3.0	3.2	8.2	8.3	11.5
Measles	5.3	13.4	3.7	2.8	9.9	2.4
Scarlet fever	3.6	4.0	4.2	1.1	1.3	1.2
Whooping cough	6.5	10.1	7.5	10.3	13.9	14.0
Diphtheria	10.5	8.8	10.8	5.2	5.9	4.4
Influenza	15.9	32.2	20.7	39.0	65.6	50.0
Meningococcus meningitis	1.2	.9	.9	1.6	.5	.6
Tuberculosis—all forms	76.2	83.5	83.1	234.7	238.7	231.8
Tuberculosis of respiratory system	66.5	73.0	72.6	205.7	208.7	202.0
Tuberculosis of the meninges, etc.	4.8	5.1	5.2	7.8	8.1	8.6
Other forms of tuberculosis	4.9	5.5	5.4	21.2	22.0	21.2
Cancer	73.4	73.7	70.3	71.6	69.2	69.6
Diabetes	16.1	16.6	15.4	19.7	16.7	15.7
Alcoholism	3.0	3.2	2.9	4.2	4.2	4.2
Cerebral hemorrhage; apoplexy	48.2	51.3	49.3	95.3	94.0	87.2
Organic diseases of the heart	120.2	126.6	115.9	214.3	211.7	213.5
Total respiratory diseases	82.3	107.4	91.5	170.7	215.6	186.1
Bronchitis	3.8	4.8	4.9	6.8	9.3	8.3
Bronchopneumonia	31.3	44.0	34.3	55.9	75.2	59.1
Pneumonia—lobar and undefined	40.0	51.1	44.8	96.2	119.2	105.4
Other diseases of respiratory system	7.3	7.5	7.5	11.8	11.9	13.3
Diarrhea and enteritis	22.8	28.6	35.2	27.8	31.1	39.4
Under 2 years	18.8	24.5	30.3	19.7	23.2	29.5
2 years and over	4.0	4.0	4.9	8.1	7.9	10.0
Acute nephritis	3.8	4.2	4.6	15.6	16.4	15.7
Chronic nephritis	61.8	65.6	63.0	125.6	132.0	122.4
Total puerperal state	14.0	14.8	15.9	24.6	23.3	25.5
Puerperal septicemia	5.5	5.4	5.8	13.0	10.3	10.9
Puerperal albuminuria and convulsions	2.8	3.4	3.7	4.4	6.0	5.9
Other diseases of puerperal state	5.8	6.1	6.4	7.3	7.0	8.7
Total external causes	73.6	71.4	74.7	117.2	114.3	113.6
Suicides	8.6	7.8	7.2	6.8	5.7	4.2
Homicides	3.2	3.0	3.6	34.0	33.9	32.6
Accidental and unspecified violence	61.8	60.6	63.8	76.3	74.7	76.8
Accidental drowning	7.5	7.1	7.5	10.5	7.7	9.0
Automobile accidents	17.2	16.1	15.8	16.8	15.0	14.5
All other and ill-defined causes of death	166.0	168.4	171.9	295.3	295.4	306.7

Mortality from Childbirth Declines in 1927

The deathrate among white policyholders from diseases incidental to pregnancy and childbirth, dropped to 14.0 per 100,000 as compared with 14.8 and 15.9 during the corresponding periods of 1926 and 1925 respectively. This drop was due entirely to lower rates for puerperal albuminuria and to other diseases of the puerperal state with the exception of puerperal septicemia. This last condition showed a small increase among the whites and a considerable increase among the colored.

Increased Cancer Deathrate in 1927

Despite the generally favorable health picture there are certain respects in which the report is far from satisfactory. The cancer deathrate among the whites is still high and substantially the same as for the same period of last year, and considerably higher than for 1925 and prior years. The deathrate for the colored rose slightly in 1927 and is also higher than for years before 1926.

Decline in Mortality from Alcoholism

Alcoholism caused 427 deaths in this nine months' period as compared with 433 during the corresponding months of 1926. The deathrate declined slightly, that is, from 3.3 per 100,000 in 1926 to 3.2 in 1927. Cirrhosis of the liver, which is closely associated with alcoholism, was charged with 865 deaths; in the same period of last year there were 863. The deathrate also dropped a little: from 6.7 per 100,000 in 1926 to 6.4 in 1927. Twenty-two deaths were charged to wood and denatured alcohol poisonings as compared with 24 during the first nine months of 1926.

Increase in the Deathrate for Accidents, Suicides and Homicides

The record for violent deaths is quite unsatisfactory. Fatal accidents increased among both the white and colored policyholders as did also suicides and homicides. Accidental drownings were a little more frequent among the whites and increased rather sharply among the colored. The mortality from automobile fatalities is still increasing as has been the case continuously for more than two decades. This type of fatal accidents has increased 6.8 per cent. this year among the whites and 12.0 per cent. among the colored.

The table on page 4 presents the deathrates among the white and colored policyholders, respectively, for the first nine months of 1927, 1926, and 1925.

THE PROBLEM OF MORTALITY IN EARLY INFANCY

The reduction in the infant mortality rate since 1900 is one of the outstanding achievements of the life conservation movement. In the ten Registration States of 1900, and the District of Columbia, the deathrate under one year of age in 1926 was more than 50 per cent. below the rate which prevailed in 1900. For the first ten years of the present century the rate of fall for infant mortality in this area was slight, at an average of only .6 per cent. per year. But, after 1910, when the problem began to be attacked on a nationwide basis, the rate fell precipitately. Between 1910 and 1926 there was a total decline of 43 per cent. in the rate, or about 3.5 per cent. per year.

For the United States Birth Registration Area of 1917, a similarly favorable picture is presented. For this area the infant mortality rate declined 4.7 per cent. per year between 1918 and 1925. The impress of the infant welfare movement has been made chiefly upon the mortality beyond one month of age, where between 1918 and 1925 the decline averaged 7.4 per cent. per year. Under one month of age the rate moved slowly downward, only 1.8 per cent. per year. Within this latter age division the improvement occurred chiefly in the second, third and fourth weeks of life. The deathrate under one day has remained practically stationary in recent years. In general, the fall in the infant deathrate became greater with each advancing month of age.

The slow decline of the infant deathrate under one month of life can be understood when the facts on the causes of death are examined. Premature birth showed a fairly constant deathrate of about 19 per 1,000 infants under one year; this condition accounted in 1925 for 24 per cent. of the deaths under one year, for 36 per cent. of the deaths in the first week, excluding the first day, and for 63 per cent. of the deaths in the first day.

Congenital malformations showed a decline of about .6 per cent. per year since 1918, and this cause accounts for 16.2 per cent. of the deaths in the first week, excluding the first day, and for 9 per cent. of the deaths in the first day.

Injuries at birth recorded an *increase* of more than five per cent. per year between 1918 and 1925. In 1918, the rate was 3.6 per 1,000 infants under one year and in 1925, 5.2 per 1,000!

These and other figures on infant and maternal mortality were presented to the Child Hygiene Section of the American Public Health Association at its meeting in Cincinnati, Ohio, October 17, 1927, by Dr. LEE K. FRANKEL, Second Vice-President of the Metropolitan

Life Insurance Company, who suggested that when the possibilities of maternal and infant care were fully realized, much of this mortality in early infancy could no doubt be reduced. About 100,000 infants die each year in the United States under one month of age and, possibly, another 100,000 are stillborn. Effective work has already been done in certain centers to detect and to treat syphilis and toxemia in the mother. These are two remediable causes of miscarriage which in turn lead to the heavy mortality among infants from prematurity. He quoted the experience of Dr. WHITRIDGE WILLIAMS, of Johns Hopkins University, in reducing early infant mortality through the detection and treatment of syphilis in pregnant women. The experience of the Maternity Center Association of New York City in reducing the toxemias which result in premature birth was also quoted as an example of what could be done to improve the early infant mortality record.

Dr. FRANKEL also said that within ten years the infant mortality rate of the United States Birth Registration Area would probably reach a figure of 50 per 1,000, but that no marked reduction below this rate could be expected if effective steps were not taken against early infant mortality. He, therefore, asked the Section on Child Hygiene of the American Public Health Association to consider seriously a programme for developing the facts on maternal and early infant mortality and for recommending a line of action which would secure a marked diminution of the prevailing high and stationary deathrates in early infant life.

SMALLPOX IN AMERICAN STATES AND CANADIAN PROVINCES, FIRST SIX MONTHS OF 1927

For the first six months of 1927, more cases of smallpox were reported in 39 states, the District of Columbia and five Canadian provinces than in the same period of 1926. There were fewer deaths, however, thereby producing a much lower case fatality rate in 1927 (0.5 deaths per 100 cases) than in 1926 (1.5 deaths per 100 cases). During the first six months of 1925, the figure was 2.2. In the United States alone, the case-fatality rates were also 0.5 for the first half of 1927 and 1.5 for the same period of 1926. The five Canadian provinces reported an increase in cases and in deaths. The case fatality rate rose as well, from 1.0 in 1926 to 1.2 in 1927.

The following table shows the smallpox experience in the United States and Canada during the first half of 1925, 1926 and 1927.

Smallpox Cases, Deaths and Case-Fatality Rates, First Six Months of Each Year 1925-1927. For 39 States, District of Columbia and 5 Canadian Provinces.

AREA	1927			1926			1925		
	Cases	Deaths	Deaths per 100 Cases	Cases	Deaths	Deaths per 100 Cases	Cases	Deaths	Deaths per 100 Cases
U. S. and Canada	20,201	103	0.5	19,311	297	1.5	28,634	619	2.2
U. S. (39 States and D. C.)	19,602	96	0.5	19,014	294	1.5	27,916	618	2.2
5 Canadian Provinces	599	7	1.2	297	3	1.0	718	1	0.1

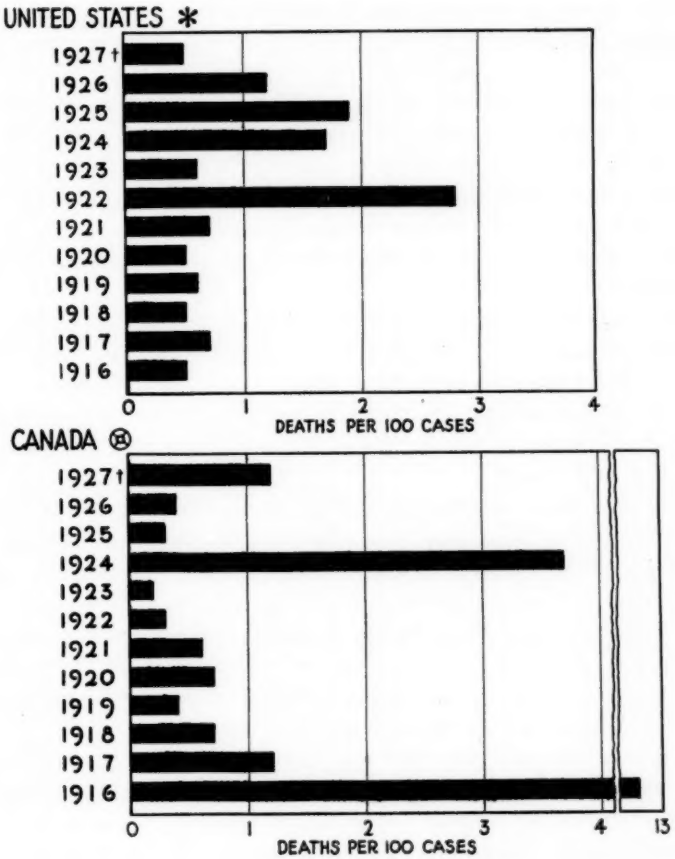
Smallpox in 1927 was less severe than in the two previous years. The case fatality rates were much less striking. The highest figure among the states was 1.11 deaths per 100 cases for North Carolina, and among the Canadian provinces, 1.98 for Alberta. Last year Arizona, which headed the list with a rate of 37.50, dropped to zero in 1927. California's rates were 9.50 and 0.68 respectively. The figure for Alberta in 1926 was 3.03. Indiana reported the largest number of cases in 1927, 3,748, followed by Texas with 2,059 cases. Only 11 deaths occurred in Indiana but 21 deaths in Texas caused this state to rank third with a fatality rate of 1.01.

Selected States and Canadian Provinces Showing a High Fatality Rate or Above-average Prevalence of Smallpox During the First Six Months of 1927

AREA	Cases	Deaths	Deaths per 100 Cases
United States:			
Alabama	1,100	3	.27
California	735	5	.68
Indiana	3,748	11	.29
Iowa	399	2	.50
Louisiana	682	7	1.02
Michigan	1,010	0	0
North Carolina	1,251	14	1.11
Ohio	1,227	8	.65
Oregon	623	3	.48
South Carolina	410	3	.73
South Dakota	213	2	.93
Tennessee	407	3	.73
Texas	2,059	21	1.01
Virginia	883	4	.45
West Virginia	145	1	.68
Wisconsin	441	3	.68
Canada:			
Alberta	302	6	1.98
British Columbia	206	1	.48

SMALLPOX CASE-FATALITY RATE IN THE UNITED STATES & CANADA

1916 TO 1927



* *Number of States Varies from 30 to 47*

† *January to June Inclusive*

⊗ *Number of Provinces Varies from 3 to 8*

HEALTH RECORD FOR SEPTEMBER, 1927

The deathrate for September among more than 18,000,000 Industrial policyholders of the Metropolitan Life Insurance Company was 8.0 per 1,000, as compared with 8.3 in September, 1926. This year's figure is the lowest recorded for that month for this important cross-section of the American and Canadian population since 1923, when the rate was 7.9. The mortality for September, 1927, also shows a slight improvement over that for the preceding month.

Two items in the month's mortality record are of very special interest. For the first time since the Montreal typhoid outbreak of last spring a lower deathrate was recorded for this disease than during the corresponding month of 1926; and September was also the first month this year for which the diphtheria deathrate was not higher than for the corresponding month of last year.

Other and notably favorable developments for the month were extremely low deathrates for tuberculosis and diarrheal complaints, for each of which material improvement was shown over the figure for September, 1926.

The record for violent deaths is more favorable than that for September last year. Suicides were less numerous for the second time in nine months, and there was a slight improvement in the case of fatal accidents. Automobile fatalities, however, again registered an increase, as has happened in every month of 1927 to date, with two exceptions.

The deathrate for the general population of large cities of the United States in September was 10.9 per 1,000, which is the same as for September, 1926, and slightly higher than for August, 1927. Diphtheria, influenza, poliomyelitis, scarlet fever and typhoid fever were more prevalent than during August but there were fewer cases of measles and smallpox. Comparison with September, 1926, shows increased prevalence of diphtheria, influenza, poliomyelitis and smallpox, with fewer cases of measles and typhoid fever.

Reports from 42 states covering the first three weeks of September show an increase in diphtheria cases to 3,503 from 2,467 during the first three weeks of August. The largest increases were in Alabama and Oklahoma. Measles cases, in 40 states, declined from 2,965 cases in the first three weeks of August, to 1,884 during the same September weeks. One state, Tennessee, reported an increase from 32 cases to 106. There was an increase of 600 in scarlet fever cases in the first three weeks of September, based on reports from 43 states. The most notable rises in case reports were in North Carolina and

West Virginia. In Montana there was a considerable decline.

The poliomyelitis situation continued to receive considerable publicity during September. Reports from 41 states showed 1,438 cases during the first three weeks, or more than double the number for the corresponding weeks of August (621). The most notable increases were in Michigan (from 76 cases to 258) and Pennsylvania (from 16 cases to 138).

Missouri was admitted to the Birth Registration Area in September. This brings the number of states in that Area to 40.

METROPOLITAN LIFE INSURANCE COMPANY

Deathrates* per 100,000 for Principal Causes, Premium-paying Business in Industrial Department

(Annual Basis)

MONTHS OF SEPTEMBER, 1927; AUGUST, 1927, AND OF SEPTEMBER, 1926

CAUSES OF DEATH	RATE PER 100,000 LIVES EXPOSED*			
	Sept. 1927	Aug. 1927	Sept. 1926	Year 1926
TOTAL—ALL CAUSES	801.4	806.8	826.5	945.6
Typhoid fever	5.2	5.6	8.5	4.2
Measles	.5	1.7	1.9	10.2
Scarlet fever	1.6	1.8	1.1	3.4
Whooping cough	6.4	7.0	9.1	9.6
Diphtheria	6.6	7.5	6.6	9.7
Influenza	5.2	4.5	4.7	31.1
Tuberculosis (All forms)	80.7	90.6	90.9	99.0
Tuberculosis of resp'y system	70.3	79.3	80.2	86.7
Cancer	72.7	74.3	73.9	73.7
Diabetes mellitus	14.3	15.4	15.3	16.7
Cerebral hemorrhage	49.9	44.6	46.8	55.6
Organic diseases of heart	114.8	114.6	106.7	134.3
Pneumonia (All forms)	37.3	38.2	36.8	98.2
Other respiratory diseases	12.8	11.2	9.1	13.0
Diarrhea and enteritis	47.0	35.9	64.5	29.8
Bright's disease (Chronic nephritis)	62.8	61.0	61.3	73.5
Puerperal state	12.5	14.6	11.7	15.3
Suicides	8.0	8.7	9.1	7.7
Homicides	5.3	6.9	6.6	7.0
Other external causes (excluding suicides and homicides)	68.2	73.1	69.6	62.3
Traumatism by automobiles	22.2	19.7	20.9	16.8
All other causes	189.7	189.6	192.0	191.0

*All figures include infants insured under one year of age.

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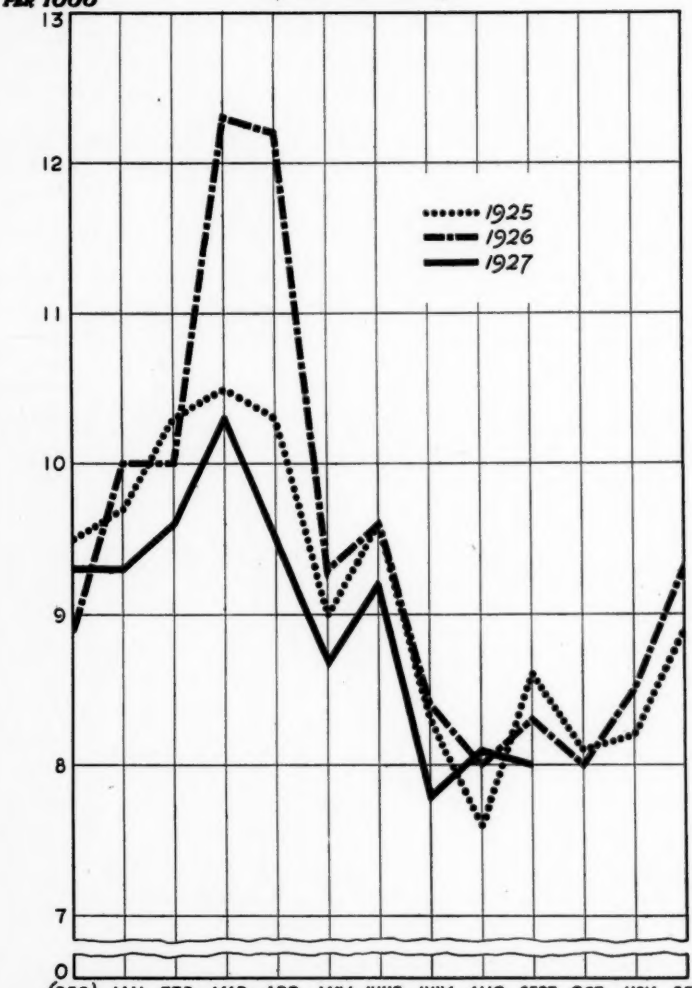
Deathrates from All Causes

METROPOLITAN LIFE INSURANCE CO.
INDUSTRIAL DEPARTMENT
(ANNUAL BASIS)



	(DEC.)	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1925		9.7	10.3	10.5	10.3	9.0	9.6	8.3	7.6	8.6	8.1	8.2	8.9
1926		10.0	10.0	12.3	12.2	9.3	9.6	8.4	8.0	8.3	8.0	8.5	9.3
1927		9.3	9.6	10.3	9.5	8.7	9.2	7.8	8.1	8.0			

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